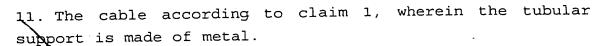
## CLAIMS

- A high temperature superconducting cable, comprising a tubular support, a plurality of superconducting tapes including a superconducting material enclosed in a metal 5 covering and spirally wound onto the support so as to form at least an electroinsulated, thermally-insulated and refrigerated superconducting layer, characterised in that the superconducting tapes have a maximum tensile deformation greater than 3%.
  - 10 2. The cable according to claim 1, wherein the superconducting tapes comprise at least a metal strip coupled to the metal covering

The cable according to claim 2, wherein the superconducting tapes comprise two metal strips coupled to the metal covering.

- 4. The cable according to claim 2, wherein the metal covering is made of silver or silver-based alloy with magnesium and/or aluminium and/or nickel.
- 5. The cable according to claim 2, wherein the metal strip 20 is coupled to the metal covering by welding.
  - 6. The cable according to claim 2, wherein the metal strip is coupled to the metal covering by brazing.
  - 7. The cable according to claim 2, wherein the metal strip is coupled to the metal covering by gluing.
- 25 8. The cable according to claim 2, wherein the strip is made of non magnetic stainless steel having a low electric conductivity.
  - 9. The cable according to claim 2, wherein the strip is made of bronze.
- 30 10. The cable according to claim 2, wherein the strip is made of aluminium.



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- 12. The cable according to claim 11, wherein the metal tubular support is made of non magnetic stainless steel.
- 5 13. The cable according to claim 11, wherein the metal tubular support is made of copper.
  - 14. The cable according to claim 11, wherein the metal tubular support has a continuous structure, either smooth or corrugated.
- 10 15. The cable according to claim 11, wherein the metal tubular support has a spirally wound metal strip structure.
  - 16. The cable according to claim 11, wherein the metal tubular support has a tile structure.
- 17. The cable according to claim 11, wherein the winding 15 angle of the superconducting tapes on the metal tubular support is smaller than 40°.

superconducting cables, comprising the steps of:

- providing a tubular support,
- 20 enclosing a superconductive material in a metal covering, so as to form superconductive tapes,
  - spirally winding a plurality of superconducting tapes onto the support so as to form at least a superconducting layer,
- 25 electroinsulating the superconductive layer,
  - thermally insulating the superconductive layer,
  - providing the possibility of refrigerating the superconductive layer below a predetermined working temperature, when cables are in use,
- 30 characterised by
  - controlling the maximum tensile deformation of the superconducting tapes to have it greater than 3%.

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19. Process according to claim 18, comprising the step of:
- coupling at least a metal strip to the metal covering of the superconducting tapes.

20. Process according to claim 19, comprising the step of:
5 - coupling two metal strips to the metal covering of the superconducting tapes.

- 21. Process according to claim 19, wherein the coupling step is performed by welding.
- 22. Process according to claim 19, wherein the coupling 10 step is performed by brazing.
  - 23. Process according to claim 19, wherein the coupling step is performed by glueing.
  - 24. Process according to claim 1, wherein the tubular support is made of metal and the winding angle of the superconductive tapes on the metal tubular support is smaller than 40°.

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